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NOTES ON THE AQUATIC NATURAL HISTORY OF THE LOWER MURCHISON RIVER

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At the conclusion of the 1948 Royal Australasian Ornithologists' Union conference a camp-out was held between September 18 and 28 at the mouth of the Murchison River, which is approximately 100 miles north of Geraldton. A detailed account of the ornithological results has been given by Eric H. Sedgwick (*The Emu*, vol. 48, 1949, p. 212).

While attending the camp opportunity was taken to make a more or less detailed examination of the flora and fauna of the stream.

The estuarine portion of the river is said to be sometimes closed to the sea by a sand-bar, but, at the time of the visit the mouth was open, and water of salinity approximately equal to that of the sea, extended some eight miles inland where rising ground checked further penetration.

The estuary supported a large number of fish, the most plentiful being the Perth Herring or Bony Bream (*Nematalosa come*). This fish was spawning and the waters were teeming with its eggs. A 10-yard tow with a 40 cm. diameter plankton net of fine mesh resulted in a catch of 25 ee. of ova. Placed in a 100 cc. pomade jar, with the cover screwed on, about 20% of the eggs were found to have hatched into lively larvae when examined about three hours later. The eggs and larvae were providing an abundance of food for some of the other fishes, which included Black Bream (*Acanthopagrus butcheri*), Tarwhine (*Austrosparus tarwhine*), Mullet (*Mugil dobula*), an Atherine (*Crateroccephalus cdelensis*), Yellowtail (*Therapon caudavittatus*) and a Goby (*Glossogobius suppositus*).

Small Penaeid prawns were fairly numerous at night along the beaches and a Mangrove Mud Crab (*Scylla serrata*) was caught at the upper end of the estuarine portion of the river.

Wilgia Mia Pool, a permanent freshwater billabong, 30 miles upstream, was examined as being typical of the freshwaters of the lower Murchison. The Pool is approximately half a mile long, 75 yards wide and of an average depth of 5 feet.

Good growths of aquatic vegetation, *Najas marina*, *Ruppia maritima* and a third species, probably *Lepilaena australis*, provide

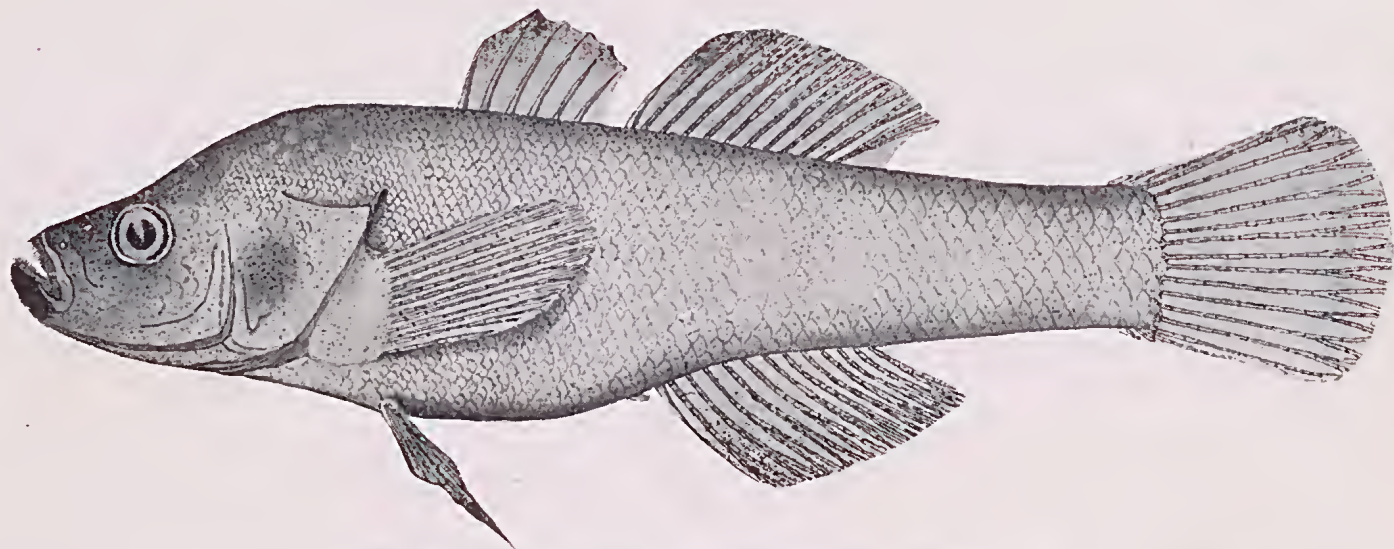


Fig. 1.—Golden Gudgeon, *Eleotris aurea*, sp. nov. x 3

—Bruce Shipway, del.

shelter for the development of larval fish and a hiding place for numerous forms of freshwater plankton, mainly Copepods. Seining through the clumps of aquatic plants resulted in catching Yellowtail (*Therapon caudavittatus*), Spangled Perch (*Therapon unicolor*), an Atherine (*Craterocephalus* sp., not *edelensis*), a Gudgeon (*Eleotris* sp.), Black Bream (*Acanthopagrus butcheri*) and Mullet (*Mugil dobula*). A freshwater shrimp was noted. The Yellowtail and Spangled Perch were seen making runs through the schools of Atherines and foraging upon them.

The area in which the Murchison River lies has a Greyian Fluvifaunula ("The Fluvifaunulae of Australia," G. P. Whitley, *Western Australian Naturalist*, vol. 1, no. 3, 1947, p. 49), and from the character of its freshwater fish fauna the Murchison is the most southern of the north-western rivers. The discovery of an Atherine other than *C. edelensis* is a new record. Later examination of the Gudgeon, which was termed the Golden Gudgeon when first caught, owing to the somewhat golden colour, showed this to be of a species which appears to be new to science and I am describing it below.

Specimens of the fish found in the freshwater section were brought to Perth alive. The Black Bream did not survive the journey. The Yellowtail lived for some nine months, when they succumbed to a change to fresh tap water. The Atherines were eaten by the Spangled Perch when the Perch were no more than twice the size of the Atherines. The Mullet (ca. 7 cm. total length) disappeared from a 150-gallon concrete pond while I was absent from Perth between March and June 1949. The Gudgeons (six) died at the end of November 1949, as noted in their description. At the time of writing, January 1950, one specimen of Spangled Perch is still alive and thriving in a five-gallon aquarium.

Family ELEOTRIDAE.

Eleotris aurea, sp. nov.

(Golden Gudgeon).

Body moderately elongate, ovate in transverse section, scaly, no lateral line. Small scales, increasing in size posteriorly, anterior scales cycloid, posterior scales ctenoid, cirri simple; 45-50 scales longitudinally; 17 transverse rows below the first dorsal fin, five transverse rows on the caudal peduncle.

Head small; nuchal hump in adults, forming a concavity in the supraorbital region, interorbital flat. Mouth obtuse and rather small. Jaws of equal length, mandible prominent, jaw angle simple. A band of villiform teeth on both jaws, pharyngeal teeth, no teeth on vomer or palate. Tongue flattened. Small weak obtuse spine on opercle, directed ventrally; opercle more or less scaled. Preopercular entire with a few large scales. Interorbital space wide. Nostrils widely separated, no tentacles. Gill opening separated by a rather narrow isthmus. Branchiostegals present. Pseudobranchiae not seen.

Two gill rakers on upper limb; 8-9 on lower, last 4 or 5 rudimentary.

First dorsal fin with 6 flexible spines, second spine the longest. Second dorsal fin with one flexible spine and 11 branched rays. Caudal fin with 13 branched rays. Pectoral fin with 11 branched rays. Ventral fins separated, not widely spaced, with one spine and five rays, the third and fourth rays being the longest, with short filamentous tips. Ventrals inserted below or slightly in advance of the pectoral origin. Anal fin with one spine and 12 rays. Origin of anal fin below third ray of dorsal. Anal papilla distinct but small.

Swim bladder present.

Vertebrae, 26.

Colour in life: Body tawny yellow with a slight golden appearance, from which is proposed the vernacular name of "Golden Gudgeon." Chin and interorbital very dark brown, black axillary



Fig. 2—Anterior view.

patch, body entirely covered with many dark brown spots, all the fins hyaline. A series of six to eight faintly discernible narrow vertical light bands.

Described and figured from a specimen with a total length of 59 mm. now lodged in the Western Australian Museum, no. P. 3283.

The species comes nearest to *Eleotris fusca* Bloch & Schneider. However in no other species of *Eleotris* is the nuchal hump so pronounced and it differs from all known species of the genus in its possession of the concavity formed by the nuchal hump when this feature is found associated with a simple jaw structure. There are

resemblance to the genus *Carassiops* (Ogilby, *Proc. Linn. Soc. N.S.W.*, vol. 21, 1895) but the new species differs in having 45 to 50 scales longitudinally instead of less than 30. Additionally my examination of species of the genus *Carassiops* shows the scale cirri to be complex instead of simple.

Specimens were obtained on September 25-26 from Wilgia Mia Pool, a billabong approximately half a mile long by 75 yards wide, with an average depth of 5 feet and located 30 miles upstream from the mouth of the Murehison River.

The fish were caught by seining with a fine mesh net through dense clumps of submerged aquatic vegetation. They appeared to be fairly numerous. Several fish were brought down to Perth alive and placed in a 5-gallon aquarium where they lived for 15 months. All the specimens died at the onset of the hot summer weather. Postmortem examination revealed excessive obesity, most probably due to the constant food supply which would be contrary to natural conditions in a densely populated billabong. They were not an aggressive fish and took prepared dried foods readily. No courtship display was witnessed during the period of observation and no sexual characteristics could be determined externally.

CUCKOO NOTES FROM THE MORAWA DISTRICT

By S. R. WHITE, Government School, Morawa.

Narrow-billed Bronze Cuckoo (*Chalcites basalıs*):

While watching the nest building and feeding of Crimson Chats (*Epthianura tricolor*) during October, 1949 (*Western Australian Naturalist*, vol. 2, 1950, p. 49), my attention was frequently drawn to a pair of Narrow-billed Bronze Cuckoos which had been calling persistently. The *Handbook of the Birds of Western Australia*, Serventy and Whittell, 1948, p. 237, lists the Crimson Chat among recorded foster parents of this species.

As several Chats' nests were crowded into this small area, I had expected that the Cuckoos would certainly use Chats' nests in which to place their eggs. Strangely, the Crimson Chats were completely ignored and a pair of Red-capped Robins (*Petroeca goodenovii*) were selected. The Cuckoo's egg was found on October 10 with two Robin's eggs in a nest in a neighbouring jam patch. Six Red-capped Robins' nests with eggs or young had already been found in this area between August 6 and September 3, and the nest containing the Cuckoo's egg was probably a second brood.

Why should the Cuckoos have ignored the many nests of the Crimson Chats—a recorded foster parent—to seek out that of the only Red-capped Robins breeding there at the time? The answer to this problem may be suggested by the fact that the Chats are apparently not a regular local breeding species. The Robins are. Five nests were known in that area in 1948. Does this obvious preference indicate that certain individual Cuckoos always fix their attentions upon a particular species of foster parent as some bird observers claim?